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"CRISES" IN THE LIFE OF REASON

CAN nature lift herself by her own boot-straps? Using the word "lift" in a eulogistic sense, the only meaning which can attach to this question is whether any one conformation of nature is better than any other. Now nature as a whole can show no progress, neither could she register it were it miraculously to occur. But a part of nature might conceivably play somewhat skillfully into the hands of another part, and by a union of effort effect a local improvement. Progress must of necessity be an episode, and in a world where better and worse are basal categories it must be a moral episode. For such an episode to be natural it would be necessary for nature to evolve her own values as well as devise a method for their operation. Inasmuch as such an episode appears at a definite juncture of time and portrays in its genesis a certain contingency, it is dramatic as well as moral. If we use the word reason to stand for the total embodied progress, not in nature as a whole, but in that part of nature which has somehow managed to rise above its source, we may say that the life of reason is not only an episode in man's career, but is also a moral drama.

In what has just been written it would be easy to recognize a conscious adoption of the point of view of Santayana. Santayana's *Life of Reason* is not only an affirmative answer to the question placed at the beginning of this essay, it is also in its literary form the most perfect and in philosophical acumen the most penetrating account of the natural history of reason with which I am familiar. The purpose of this paper is to review the first volume of the series, not in a spirit of criticism, but with the intention of describing the complications that arise in the development of reason. Being a dramatic episode, reason has its critical junctures and its resolutions. What I am especially interested to describe are the "crises" in the drama. Though uncritical, the exposition will exhibit at times a spirit of wariness. The constant use of such terms as "natural apparition," "familiar mystery," "speculative fable," "eddy in the current," "kindly illusion," "significant figment," "inveterate preference for form," "miracle of insight" begets a suspicion that Santayana might, after all, have attributed to nature something of the art of the prestidigitator.

When Glaucon and Adeimantus approach Socrates with the ques-

tion, does it pay to be moral? they are careful to make it plain that they do not doubt that virtue and utility are inseparably connected; only, they say, they have never yet heard the thesis that justice is more gainful than injustice defended in a satisfactory manner. Now I do not doubt that reason has a natural history and that ideals have a natural basis. Neither do I doubt that if man is to recognize the forces which govern his life they "must portray themselves in human experiences."[1] But to accept and justify these forces just as they are given and to praise them for their loveliness as is done, for example, by Lucretius, is to mark at once both the value and the limits of naturalism. The poetry of Lucretius, says Santayana, is "not the poetry of a poet about things, but the poetry of things themselves."[2] The operations of nature stand in no need of idealization; the interplay of its mechanical forces lends itself as much to poetic expression as to scientific formulation. Not in transforming nature into something more ideal than herself, but in conforming to her as the pattern of all beauty and excellence, is to be found man's task. Resignation in some form is the unescapable issue of a mechanistic conception of nature and life. But to make an ideal of conformity is to renounce the imagination and to resign our humanity. We exalt nature in order to humiliate man.

If naturalism is "sad," idealism is "rudimentary" and transcendentalism is "insolent." As young children do not distinguish their images from things external, the idealist mistakes the visions of the imagination for a perfect and eternal reality. To think oneself omniscient is a mark of immaturity, but to mistake the stirrings of impulse for the creative energies of nature is a colossal piece of human impudence.

But the forces within us do somehow carry us to things beyond us. Our primitive instincts no less than our "leaps" of thought have a transcendent reach. The persistent striving of an impulse is the substance of things hoped for and its concomitant emotion is the evidence of things not seen. To foster and maintain an interest, and to generate a force that can conceive and pursue it, is nature's way of rising above her source. Reason is the process by means of which man realizes ideals. We have ideals, because, being human, we need them. If naturalism, by withholding ideals, gives us too little, idealism, by objectifying them as structural elements inwrought into the framework of existence, gives us too much. Between these extremes lies the "illusionism" of Santayana, not sad, though wistful; not rudimentary, but significant; not insolent, but kindly. Ideals, originating in human nature and ministering to human needs, are legiti-

[1] *Life of Reason*, Vol. I, p. 1.

[2] *Three Philosophical Poets*, p. 34.

mate to the extent that they are generous and real as far as they are revelant. It is not surprising, therefore, to be told that ideals consitute the realm of "significant figments" and "kindly illusions." An important caution must always be observed touching the legitimacy of ideals. To idealize the natural is not the same thing as to naturalize the ideal. Every ideal is a work of art and final causes nowhere exist in nature. Aristotle's deity is a legitimate formulation of a moral aspiration, but as a physical principle of natural efficiency it is altogether deceptive. To express our aspirations in "speculative fables" is the crowning work of reason, but to deify an abstraction or to rationalize a myth is to open the way for dogmatism and deception. The reverse process is less kindly and more illusory.

At the outset we may dispel "transcendental qualms." All of the principles of synthesis and evaluation necessary for a natural history of reason are discoverable within experience itself. "The most irresponsible vision has certain principles of order and valuation by which it estimates itself; and in these principles the Life of Reason is already broached, however halting may be its development. We should lead ourselves out of our dream, as the Israelites were led out of Egypt, by the promise and eloquence of the dream itself."[3] Experience is no enthymeme. The premises from which it is derived and the conclusion which it yields can be discovered by any one who is sufficiently gifted to discern them. A natural explanation is one which accounts for a fact by referring it to other facts which belong to the same order of existence. For Thales to have said that the earth floats on water is at least better than saying that it rests on the shoulders of Atlas. "Early experience knows no mystery which is not somehow rooted in transformations of the natural world." For Santayana, as for the Greeks whom he reveres, absolute qualitative change is unthinkable. Reason must, therefore, have its natural antecedents.

We begin with the immediate, thanks to Heraclitus[4] who was the first to descry it. What the immediate reveals is impulse and imagination, two pre-existing and primordial processes, the union of which constitutes reason. Upon the advent of reason, life is already swiftly moving toward impulsive and instinctive ends. Side by side with the life of impulse and equally vital is the life of imagination, a dreamful existence far more fundamental than anything so sophisticated as perception. Originally these operations of nature go on in ignorance of each other. It is unfortunate, for each possesses

[3] *Life of Reason*, Vol. I, p. 54.

[4] The brilliant characterization of Heraclitus (Vol. I, p. 15) is somewhat misleading. In his appeal to reason and in his blending of naturalism and humanism, he is much more than the "honest prophet of immediacy."

what the other lacks. Impulse has power, but is blind; imagination has vision, but is impotent. Promordial consciousness is disinterested, entirely speculative, and as a result is altogether improvident. Reason arises when consciousness asserts a preference. By choosing among objects, it discovers itself. It comes to take an interest in itself for the sake of the object it prefers. The accident by means of which ideas, which originally have no relevance to action, attach themselves to impulse, thus giving potency to vision and foresight to power, is nothing less than the birth of reason.

Heraclitus began with the immediate; he also ended with it. One day is as another was the burden of his lament. Could he have come after Plato he might have arrested the flux with a figure of speech. In this respect Santayana is more fortunate. "When the flux manages to form an eddy and to maintain by breathing and nutrition what we call a life, it affords some slight foothold and object for thought and becomes in a measure like the ark in the desert, a moving habitation for the eternal."[5]

Coextensive with every alternation in impulsive and ideational life is a tone of feeling. Pleasure and pain, or as we should now say with a more strict psychological accuracy, affections of pleasantness and unpleasantness, are invariable accompaniments of every phase of immediate experience. Herein lies the possibility of discrimination and preference. That pleasure is worthy of choice is an ultimate fact. One needs no transcendent obligation to persuade him to enjoy himself. It is not a question of the worth of pleasure, seeing that pleasure is itself the basis of all worth. Selection on the basis of a felt preference is the first differentiation in the flux.

Just pleasure and pain do not constitute rationality. But when once the source of value is revealed, consciousness can no longer remain disinterested. A further step is taken when ideas attach themselves to pleasure. Here interest awakens. The half-born reason welcomes returning joys and trembles before impending sorrows. As ideas suffuse pleasures, pleasures somehow overflow and attach themselves to objects. "Here we come upon a crisis." What happens, we are told, is that pleasures become objectified, they saturate the object which happens to come along just in the nick of time. Pleasures affiliate with the objects which cause them. As a result objects can be named and their recurrence predicted. Thus arises the concept of causality. Causality does not arise from any malicious intent on the part of reason to fix the blame for its distress or in any feeling of gratitude for favors received. Its origin lies solely in the fortunate eccentricity of pleasure to affiliate with its source. It might have been entirely different, thus showing that

[5] *Ibid.*, p. 42.

the life of reason is after all only a natural contingency. Just here, I suppose, is Santayana's justification for calling the life of reason a dramatic episode. Pleasures and pains, therefore, become the links that bind impulse and imagination together. Henceforth their destinies are bound up in the same process. Ideas become factors in action. We know not things directly but only through the intervention of the pleasures they afford us.

When imagination connects up with impulse it joins hands with a body well on in its evolution. The body has aims and needs. Every attitude is an incipient courtesy and every gesture is a social response. Imagination falls in with this purposeful activity already well launched. It makes no attempt to graft its own aims on to the body; it does not because it hasn't any. Imagination has no interests; only bodies have that. The function of the imagination is to conceive ends, not to possess them. In a sense consciousness remains disinterested still, its only interest being to assist the body to an awareness of the ends which it already possesses though has not as yet foreseen. Impulse needs no incentive and what consciousness brings is not efficiency but light.

Reason is now born and an external world is discovered. We are told *how* all this happens. But why does consciousness, which is a "born hermit," turn its most prized possessions out of doors? To explain this we can not simply revert to a primitive animism, since it is animism itself that is in need of explanation. Santayana begins as does Descartes with the inner life and works outward to the discovery (or invention? or apparition?) of nature. Does he really escape subjectivism? A discussion of this question would take us too far afield. It is merely suggested as a real difficulty in Santayana's analysis. Furthermore it seems to me that the separation of impulses and pleasures and ideas, even allowing for the literary effect, involves a false abstraction. Activity is a single and indivisible process with ideation, affection and conation as inseparable phases. But let us continue with the exposition.

The recognition of stray and random objects falls far short of a general theory of nature. A further step is taken in this direction. Consciousness is not only a "born hermit," it is also a born conservative. Though the new-born reason is everywhere confronted with surprise, for in strict literalness no element of the immediate ever recurs, reason itself has no sense for novelty. The same back again is its continual lament. To maintain a life of sentiency on a rational plan requires two things: that pleasures return and be as they were. And what sentiency requires, reason proclaims, namely, independence of objects in order "to normalize their recurrence," and a settled character or form in order "to normalize their constitution."

Independence and form are the two conceptions in terms of which nature is discovered and unified. How do these conceptions arise?

The question, how is knowledege possible? has always had great fascination for philosophers. It is a legitimate question. Born into a world not expressly designed for it, yet there, if anywhere, reason must find a home. Though in its later career it may, through misfortune or disillusionment, come to renounce the world, in its infancy at least it is loyal to its lineage. Out of this loyalty arises the means of converting the world into a home for the spirit. Thinking is a form of life. As a vital process, it must like all life's other processes, maintain itself by extracting from its environment the means of its own conservation. The new-born reason can not feed on the flux. The immediate is not food for thought. The process by means of which thought derives its sustenance is a sort of living on its own past. The past never recurs, but something of its being is retained and utilized in the present. The mind, having an "inveterate preference" for form, singles out the quality and lets the quantity go. It is thus that experience becomes accumulative. It is not a mechanical process of addition, but a vital process of nutrition. Only a growing experience can sustain and nourish the process of thinking. Form or essence is, therefore, the food prepared by a voracious intellect by its own assertive energy. The mind is not endowed with form, it only possesses a preference for form; it does not possess categories, only a tendency to categorize. No "transcendental ego" is needed. The demand for that *deus ex machina* is the result of treating thought mechanically rather than vitally. Plasticity and modifiability of nervous tissue is all that is required. Epistemology is a branch of physiology.

This may be expressed differently. Transcendence, not immediacy, is the crux of thinking. How what is present can imply what is absent is just one of those "familiar mysteries" inexplicable but factual. Suggestion is just as much a natural operation as digestion. It can neither be intelligible nor unintelligible, since it is the nature of intelligence itself that is being considered. All that we can say is that if what is implied were present in the same sense as that which implies it, there would no longer be implication, but explication. Neither would there be thought. Implication is a sort of mist of meaning that rises above the stream of sentiency, as natural as evaporation; and like evaporation, involving a distilled essence which in good season will return and enliven the source from which it first arose.

The only possible issue of Santayana's theory of knowledge is in mechanism. Mechanism, being the basis of intelligibility, is one and the same thing as explanation. The unification of all of those

ideal terms by means of which reason dominates and controls the flux, assigning to it independence and permanence, constitutes the realm of nature. Nature, therefore, is ideal. And since it arises in response to the demand for explanation, it is a purely mechanical system. Reason prescribes its laws. Only ideals are real, real in the only sense in which they can be real without losing their ideality. We have a knowledge of them as we know any goal of thought, not as a sign, but as a thing signified. Sentiency can no more be sentient of the ideal than the given can be implied or the absent be present. The confusion of the ideal with the sentient is the basis of dogmatism, the most deceptive form of reification. That is why, though it is never wrong to pass from the sentient to the ideal, it is never right to reverse the process. As Hume would have said, you can have no *a priori* knowledge about matters of fact.

Nature disclosed is mind discerned. Reason's discovery of mind is not reason's discovery of itself. It is the discovery of that vague realm suspended between nature and sentiency. Nature is that part of existence that has been reduced to constancy and control. The discovery of mind marks reason's inability to subdue the flux all at once. Despite the advance of mechanism an element of caprice persists and seems to stand outside of the order of nature. Nature is mechanism; mind is the residuum of the indeterminate, the realm of the unpredictable. Santayana might have expressed the discovery of mind in a simpler way. A part of the ideal of perfection, he tells us, is that all ideas be applicable in action. The discovery of mind marks the failure of this ideal. Imagination, a form of life, like other vital processes, is prolific. It produces countless ideas with the hope that some one of them by attaching itself to impulse may become fruitful in action. Reason must take some notice of those ideas which fail to connect with impulse. Never leaving the realm of the imagination they can never enter the realm of nature. They are untrustworthy because they are untried.

When we say, love your neighbor as yourself, we assume the independent existence of a neighborly spirit. But for reason there was a problem of discovering fellow-minds before there was a problem of loving them. Now the discoveries of reason, no less than those of science, are often entirely accidental. It could not be otherwise with a subject-matter that is irrational and a method that is experimental. The discovery that other men have minds is a pure accident. It could have happened only to a rudimentary consciousness. Sophistication always leads to solipsism. Mature reflection, seeing that no idea can be transferred from one mind to another, would be sure to deny any such thing as mental interaction on intellectual grounds. Consequently, had fellow-minds not been revealed to emotional con-

sciousness at a time before reason learned the use of dialectic they would never have been revealed at all. Already we have seen that but for an emotional overflow, external objects would never have been discovered. It is easy to go one step further and turn the objectified feeling into a principle of natural efficiency. Now the "pathetic fallacy" is usually fallacious, but there is one case when it is not, namely, when it happens to be true. Truth must of necessity be an accident in the trial-and-error method. The discovery of other minds comes as the natural result of "varied reaction" when applied to emotional life. Prompted by a vague and indistinct feeling for personal presence, rudimentary consciousness puts out various tentacles one of which, as if by a "miracle of insight," touches the projection of a similar consciousness similarly groping.

This, in outline, is the natural history of reason. It includes the following steps: (1) Antecedents in impulse and imagination; (2) the basal character of pleasure and pain, preference asserted and value revealed; (3) the attachment of ideas to pleasures and the projection of pleasures to objects, interest awakened; (4) the rise of the concept of causality and the external world discerned; (5) explanation required, a theory of knowledge proclaimed, and nature discovered and unified; (6) the discovery of fellow-minds. Inasmuch as results are never mistaken for causes and values never confused with origins, the account is a model of natural description. Were there space in which to add criticism to the foregoing exposition, it would be directed along three main lines. First, a false abstraction, more than merely rhetorical, involved in the separation of impulse, feeling and ideation. Secondly, can one, beginning with the inner life of feeling, the domain where a "stranger intermeddleth not," escape subjectivism? Thirdly, by attributing to mind a preference for form and by assigning to reason the function of legislating for nature, is Santayana as far from Kantianism as he thinks he is?

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THE COÖRDINATE CHARACTER OF FEELING AND COGNITION

ONE of the vexed questions of psychology that troubles the philosopher who would describe the nature of conscious activity is the disputed status of feeling-states. Fourteen years ago C. Stumpf[1] indicated the three possible views in respect to the status of pleasure and displeasure. Feeling may be a quality of sensation (so H. R. Marshall); feeling may be a mental element coördinate

[1] *Zeitschr. für Psych.*, Vol. 44, pp. 1–49, 1906.

with sensation (so E. B. Titchener); feeling may itself be a kind of sensation (Stumpf's *Gefühlsempfindungen* theory). It is not my purpose in this paper to weigh the merits of these theories. I am in sympathy with the second of the three, and so believe that in the unitary conscious state the two aspects, feeling and cognition, are coördinate rather than one subordinate to the other. I do wish to point out, however, perhaps as devil's advocate, that two of the arguments in support of the theory of relative independence of feeling and cognition, although considered impregnable, will not bear the test of close scrutiny.

In his recent book *The Origin of Consciousness*,[2] Dr. Strong makes much of the difference between affective states and sensations in support of his argument for the originality of the psychical. After describing the possible application of the "return wave" theory to feelings, he adduces two criteria by which he judges it proved that feelings and sensations differ fundamentally. He says, "The sensations into which affective and conative states have been resolved are defined as psychic elements due to nerve currents from the periphery; the sensations which are cognitions of the intra-bodily are sensations localized in a particular part, and bringing before us a process occurring there. In especial, the latter class of sensations are attended to—or rather the objects they bring before us are attended to: the sensations constituting pleasure and pain, emotion and will are not attended to. To attend to an emotion is to destroy it—it breaks up at once into the localized sensations which are cognitions of intra-bodily processes" (pp. 85–86). Speaking of affective states, he says, "Objects are localized, they are unlocalized; objects are attended to, they are unattended to and even abolished by attention" (p. 86). Let us examine these alleged criteria.

I

Feeling-states are said to be abolished when attended to. Unfortunately, the evidence in support of this statement is more of the nature of casual observation than of careful introspective analysis. Nevertheless, the latest evidence, contained in Dr. Wohlgemuth's monograph, *Pleasure-Unpleasure*,[3] goes toward substantiating the common observation that the more one directs his attention to the cognitive aspects of a situation, the less intense are the affective aspects. As Dr. Strong says, "Even in the case of a keen sense of disappointment, where we are very apt to dwell upon the feeling, the keen sensation in the throat of which we quickly become aware

[2] London, 1918.

[3] *Brit. Jour. of Psych.*, Monograph Supplement VI., pp. 1–252, Cambridge Univ. Press, 1919.

is an object that displaces the emotion and makes us in so far no longer disappointed. The young child who simply bawls is the truly disappointed person." Dr. Wohlgemuth, however, found that when a feeling is attended to *as part of a situation* it becomes "clearer." It seems equally to be a fact of common observation that we may increase a sense of disappointment by attending repeatedly to the factors which are associated with the disappointment. The child who is compelled by parental order to stay indoors does not conquer his disappointment by thinking how he might be outside with his companions playing ball. Dr. Wohlgemuth seems to have combined successfully the empirical evidence in his rule, "If a feeling-element is attended to as belonging to a cognitive content, or as part of a situation or complex, it is intensified and becomes clearer; but if an attempt be made to focus the attention upon it to the exclusion of its cognitive concomitant the feeling-element is destroyed."[4]

But the latter half of this rule is not a conclusive argument for the coördinate character of feeling and cognition since there is a parallel case lying wholly within the field of cognition, where direct attention destroys a sensation. The visual field offers a considerable range of given objects to vision. Only one small part of this field, however, may be attended to at any time. The other objects are said to be "marginal." Now how may we attend to objects in the marginal area? The naïve answer would be, Look directly at the objects there. In so doing, however, we no longer view these objects as *marginal,* but as objects at the focal point of attention. It is not even true that in each case the objects will be the same. Marginal objects have an indistinct and blurred character that is quite different from the same objects directly attended to. Furthermore, they sometimes lack some of the qualities that are to be perceived in direct vision. A bit of colored paper held outside the range of the blue-yellow zone appears uncolored when seen marginally—a very different object from the same bit of yellow paper viewed directly. However, it is quite possible by practise to get a clearer view of the paper as a marginal object by choosing a fixation-point to which to attend. In this case the observer attends to the object *as part of a situation.* The parallel with feeling is obvious. Now if feeling might be characterized as of a marginal nature, we should not be able, on the score of a difference of behavior in regard to attention, to affirm its qualitative difference from sensation or to speak of it as an independent element of consciousness.

In this connection the "furtherance-hindrance" theory calls for

[4] *Ibid.*, p. 246. *Cf. Lectures on the Elementary Psychology of Feeling and Attention,* E. B. Titchener, p. 70, New York, 1908.

some consideration. It is well enough established that pleasure accompanies smoothly running activities, whereas displeasure is associated with any impeded progress. What is beneficial to an individual is often marked by unimpeded progress, while an obstacle will stand in the way of an activity. Here we have to do largely with the motor "set" of the organism. Whatever may be the precise neural basis of pleasure-displeasure, it is almost certainly more diffuse than the neural basis of any sense. The facts warrant our admitting the motor elements of reaction as associated in part with feeling. Here some light is thrown upon the relation of attention to feeling. For, if the neural basis of feeling partly consists of nerves leading to the brain from the muscles employed in an activity, it is easy to see that if the attention be directed to these elements to the exclusion of the objects provoking the activity on the sensational side, the motor "set" of the organism will be changed completely.

A second argument in favor of the coördinate character of feeling and cognition is that feelings are non-localizable, whereas the objects of cognition are localized. This argument, however, is not supported by sufficient experimental evidence. In fact, it is directly controverted by Dr. Wohlgemuth who says,[5] "Feeling-elements can often be localized. The ability to do so depends to some extent upon the attitude of the observer toward the feeling-element. The more his attitude allows him to objectify the feeling-element the easier it is to localize the feeling-element, or, possibly, *vice versa*. The question of the localization of the feeling-elements has been as hotly controverted as that of their co-existence, and I hope that now it will be considered as definitely established. All my observers are in agreement about it. . . . The ability to localize the feeling-elements improves greatly with practise. Great individual differences obtain with respect to the ability to localize the feeling-elements, especially those of auditory and visual sensations." In the present state of experimental evidence it seems unwise to base a theory of feeling on the attribute of non-localizability. It may be remarked that it is often extremely difficult to locate precisely some of the cutaneous sensations and more difficult yet to localize the organic sensations.

We must not, however, treat the important alleged criterion of non-localizability in a hasty manner. Observers differ in their results, and the agreement of the four trained observers employed by Dr. Wohlgemuth may not be regarded as absolutely decisive. Much of the difference of opinion, I believe, is due to a lack of agreement among writers as to the meaning of the term "localizability." It

[5] *Op. cit.*, pp. 242–243.

is instructive to turn to Professor Titchener's discussion of the matter.[6] He gives two possible definitions: localizability may refer to perceptual space or it may refer to the coextensive character of affective states with the whole conscious state in contrast with the side-by-sidedness of sensations. Dr. Wohlgemuth uses the term with quite a different meaning. His observers locate the affective states in the tongue, mouth, nose, throat, hand, head, etc. Only in the case of visual and auditory sensations do the observers ever refer the affective states to the place of the stimuli in perceptual space. Dr. Wohlgemuth, again, would have no use for the second possible definition of Professor Titchener because his own evidence (and that of Kellogg[7] and others) indicates that mixed feelings are unquestionably a fact.

So far as mixed feelings are concerned, I have long been convinced from my own introspection that they are the rule rather than the exception. The experimental results achieved in this matter convince me that feeling can no longer well be defended as a coördinate element of conscious activity on the ground that one and only one quality of feeling is at any one time coextensive with the cognitive element of a conscious state. To the definition of localizability as a projection of the affective elements by conscious activity into perceptual space, I would say that further analysis is demanded. For the definition may mean either of two things: either affective states are supposed to carry with them an affirmation of objects in an existent world parallel to a characteristic affirmation in cognition, or there is said to be in the *content* of sensations and feelings a similarity of spatial reference.

I judge from the words of Professor Titchener and Dr. Wohlgemuth that each emphasizes one of these possible interpretations. Professor Titchener might conclude (although in point of fact he gives up the criterion because of insufficient agreement among observers) that feelings differ from sensations in that the former are localized within the body and the former outside the body. The neat question here implied, but never so far as I know discussed, is whether the affirmation of a feeling as intra-bodily is an existential affirmation of the bodily organs involved, or whether the affirmation is of objects considered merely as given to consciousness.

It is quite possible, however, to determine the validity of the criterion of non-localizability defined in the second way. We may eliminate all affirmations of physical space, including parts of the body; we may eliminate everything that is not integral to the *given* in sensation and feeling. Then we may ask whether sensations and

[6] *Op. cit.*, pp. 43–55.

[7] *Psych. Monographs*, Vol. 18, No. 3, 1915.

feelings as given have a local character, an element of *distance from* or "inner space" that may be discovered introspectively. When we do this, however, we find that, although we discover the local character present in all sensations, the attribute has lost the precision that attaches to it in many cases by virtue of an accompanying existential affirmation. We find that there is a whole range of variation, from organic sensations that may just barely be localized, to visual sensations which are quite definitely localized with respect to other sensations in the visual field. The attribute of local character seems definitely to be connected with the place of the sense end-organs *i.e.*, there seem to be places where we see, hear, feel cold, *etc.* But some of the "lower" sensations, although they are discovered to have the spatial reference when truly introspected, are most indefinite in their precise location. They are no more certainly localized than many of the obscurer feelings of pleasure-displeasure. These observations would seem to indicate that localizability is not an intrinsic attribute only of sensations. For feelings have their own curve of localizability, and there is nothing to distinguish the lower limits of the two curves of sensation and feeling as respects this attribute.

The similarity of affective and cognitive states as regards localizability is even more evident when we consider the organization of sense-organs and the relation of organization to marginal consciousness. The cutaneous sense end-organs are organized only to a slight degree; we do find groups of cold and heat spots. But in the "higher" senses the sense-organs contain many end-organs in a circumscribed area. The result is that within the limits of a single sense attention must single out one impression that is focal and leave the others to marginal consciousness. The term "marginal" may be applied to *all* sensations not at the focus of attention. Thus, if I attend to a cold sensation felt in my hand, the cold sensation occurring at the same time in my foot is marginal. Careful study should be made to determine the degree of localizability of two sensations of the same quality as compared with two sensations of different qualities. I believe that the most precise localization is found when two sensations of different quality are derived from end-organs in the same sense-organ. In any such comparison one sensation will always be marginal, as attention can be directed to but one at a time. Marginal visual sensations are most precisely located, next those of sound (by a musical observer).

Now whatever be the neural basis of feeling, it is generally agreed to be less organized and more diffuse than the end-organs of any of the senses. If, therefore, we are right in speaking of feeling as of a marginal nature, we shall expect very little precision in

the matter of localization. We shall expect that individuals will generally disregard the localization of feelings, and that they will find that feelings may be recognized as local only upon careful introspection. On the other hand, the marginal sensations of the visual sense will be so vivid, owing to the high degree of organization of the visual end-organs, that they will be universally recognized.

II

We may postulate that the question of the relation of feeling to cognition must be decided by introspection of mental states rather than by investigation of their neural bases. Undoubtedly every psychical activity has a neural basis, but there are no two distinct types of neural activity to which cognition and feeling respectively may be referred. Even if there were, our problem would not be solved, as we have to determine whether cognition and feeling are coördinate in *conscious activity*. Consideration of the factor of attention has not revealed any criterion by which this coördinate character may be established. Nor has localizability, applied strictly to conscious states, proved more serviceable (although the possibility of distinction on the basis of a difference of affirmation was suggested as a problem requiring investigation).

It is entirely possible, however, that, when we come to analyze conscious states more fully, we shall find that the qualities of pleasure and displeasure are in some respects not homogeneous with the qualities of sensation. They may have characteristics that warrant their being regarded as a distinct aspect of conscious activity. I believe that there are at least two such characteristics.

1. One can not ever introspect and not discover pleasure, displeasure, or both present in consciousness. Much was made formerly of an "indifference-point." But the theory of pleasure-displeasure as a linear scale has been destroyed as completely as the theory that cold and heat sensations form a linear scale. Feeling would appear to be duo-qualitative, pleasure and displeasure each constituting a linear scale. Furthermore, it is not necessary to the validity of this first criterion that introspection disclose the presence of a feeling-element in association with *every* sensation. To postulate this is to postulate the difficult theory of feeling as an "affective tone" of sensation. It is very likely true that I am quite indifferent to the sounds that are buzzing in my marginal consciousness as I write at the present moment. The essential point is that pleasure or displeasure or both be found *somewhere* in every conscious experience, even if only as an accompaniment of organic sensations. If this requirement be satisfied, it is fair to say that feeling is coördinate with cognition in conscious activity. In respect to the

attribute of being present in every conscious state, feeling will be on the same footing with cognition which, too, is never absent from conscious activity. That feeling is usually (not always) less prominent as a conscious element than cognition is easily understood if feeling is of a marginal character; it would thus resemble marginal visual sensations which are neglected by us habitually a good part of the time.

2. Another firm foundation for the theory of the coördinate character of feeling and cognition is the fact that of the conscious qualities only pleasure and displeasure may become detached from the situation in which they arise and cling in succeeding conscious states to qualities of *any* of the senses. In the field of cognition only one sense has a slightly similar characteristic, and it differs in two ways from feeling: (*a*) The visual after-image may become attached to a succeeding light-sensation, but here the qualities are within a single sense. (*b*) The persistence of the visual after-image is marked either by a fusion which abolishes the quality that fuses (as when a red after-image fuses with a blue sensation to form purple), or by an entire absence of fusion, in which case the after-image persist as an independent entity (as when the image floats before the eyes and gets in the way of present vision). Now when pleasure or displeasure continues over from a preceding to a succeeding conscious state, it is not fused with another quality in such a manner as to lose its character of pleasure or displeasure, but, remaining what it was, it colors affectively the new state. Very interesting results as to the behavior of the feeling-elements of moods are reached in Dr. Wohlgemuth's experiments.[8]

The case for feeling as a coördinate aspect of conscious activity, therefore, rests partly on the universal presence of one or both of the affective qualities in all conscious states, partly on a certain independence of cognition manifested by feeling in the production of moods. These facts are more significant than the very questionable arguments adduced from attention and localizability.

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THE BASIC ASSUMPTION OF EXPERIMENTAL SCIENCE

IT is often supposed that experimental science inevitably must assume the existence of an external world which, to a certain but very important extent, is not subject to the control of the more or less passive observer. Moreover, it is supposed regardless of what may be the case for such pure or abstract non-experimental sciences

[8] *Op. cit.*, pp. 243–244.

as, let us say, non-Euclidean geometry, the strictly experimental sciences, such as chemistry and physics, could not exist, let alone be understood, unless it is assumed that there is an outer reality whose laws, at least, are not subject to our control and about which we can learn most directly, if not exclusively, by means of the experimental method.

Now it is, of course, a fact that the scientific, and indeed the most anti-realistic metaphysician, does live and act, no matter what his belief may be, as if there were an outer independent order of fact and law to which he must conform. But it must be pointed out that in spite of the practical and, perhaps, if some metaphysicians are correct, metaphysical necessity of this belief, as far as the purposes of science go, be that science experimental or abstract, this assumption that there is an outer independent order of reality is but an unnecessary and even unscientific over-belief. The procedure of either the experimental or the abstract sciences is every bit as understandable, and indeed gains somewhat in metaphysical economy, if stated in a form which does not assume anything as superfluous as the existence of an order of reality back of the percept-concept experience which is the immediate datum of the scientist. All that is really necessary for the scientist to assume to be able to give an intelligent account of his procedure is, (*a*) the percept-concept nexus that forms the prime experience of the individual scientist, (*b*) that there exist certain necessary relations between parts of the percept field, and (*c*) that there is a certain amount of ignorance as to what these necessary relations are. In these terms the problem of the experimental scientist is merely the problem of finding out, by trying, if, when he has a certain selected set of percept data, that is, when he has present to perception the conditions of the desired experiment, he has also present to consciousness the added percept datum expected if his theory as to the relationship between various parts of the percept field is correct.

Thus to the scientist it is immaterial whether he assumes the existence of an external world or not, but (provided only he realizes the theoretically unnecessary and extraneous non-scientific assumptions involved) of course it is highly convenient, if only for the purposes of exposition, to state his results in a form which anyone can understand, and that means in non-subjective terms.

If the existence of an independent external world is not assumed by experimental science, what is involved? It seems to me that Mill was on the right track when he emphasized the permanency of certain factors in experience. This permanency, however, does not lie in the percept data themselves, as Mill seems to have supposed. The percept material itself, the "things" or "substances" which

we are accustomed to suppose lie back of it, are, as was pointed out long ago by Plato, notoriously unstable. Not only do two bits of sense data seem, that is are, constantly changing, never having twice the same inter-relation, but even the "things" of which they are supposed to concern themselves, that is to say the percept data with as much of variance abstracted as is known or suspected to be due to the individual and not inherent in the permanent factors of the percept field, are constantly changing. The constant things of physics, the mol of gold, the standard meter stick, are in fact constantly varying in position, temperature, electrical charge, and even in mass and dimensions. The significant thing about them which is constant, the only thing that the scientist need assume constant, is not the constancy of substance, but the constant truth of certain conditional propositions about them, namely, that under certain standard conditions of temperature, handling, pressure, *etc.*, this given nexus of concept-percept experience, which we call the mol of gold or standard meter, will have the mass of about 197.2 grams, or the length of one meter. And it is to be noted that even here we are not really asserting that a given "thing," the mol of gold or the standard meter, has fixed attributes, nor even that a given sample "matter" or whatever the substance of things is supposed to be has certain properties. What concerns science in such shorthand expressions as "gold is yellow" is not that gold is a simple entity with the invariant property of yellowness—though we are not denying that metaphysically speaking that may be a fact. What does concern science is the permanent truth of a certain conditional statement not attributing attributes to a substance, but asserting the existence of a fixed relation holding between certain attributes and certain other attributes. That "gold is yellow" means to the scientist that under certain limited (standard) conditions there is a fixed relation between selective reflection for yellow light and the atom number (79); or, to put the same fact in a form which avoids even more clearly the assumption of the existence of an external "thing," what is meant by saying "gold is yellow" is nothing more nor less than saying that in a certain limited set of percepts (the limitation being that other percepts of the set must be standard) the percept "yellow color" is inevitably to be associated with the percept nexus "atom number 79." From this it follows that the real fixed entity of the scientist is not some bit of substance, but a proposition, the fixity of which is of the same nature as the truth of any proposition, whatever that is; and though it may be metaphysically necessary to assume some ultimate fundamental substance or fixed stratum of being, say matter or force, on which to tack "properties," science does not need to assume anything so meta-

physical. All it must assume is not some primary substance to which certain properties appertain, but only that if we have certain percepts certain other percepts are invariably present also. The question of ultimate substance it leaves to metaphysics.

In a like manner science leaves to metaphysics the question of the locus of the necessity or compelling power which it must assume correlates under standard conditions "yellow color" with "atom number 79," or rather correlates the percept "yellow" with other percepts associated with atom number, such as relative position of a certain fluorescent line on an X-ray screen. If there is to be any science at all, there must of necessity be some such correlation, but whether the reason for this correlation lies in some law of our percept mechanism, as it may very well, or whether it lies in some logical necessity inherent, say, in the definition of atom number, which logically requires that atom number 79 be associated with a band of selective absorption such that under standard conditions yellow light is selectively reflected, or whether this necessity is physical, it being the physical nature of gold, only to be determined experimentally, to so reflect—all these questions are outside the scope of science. To repeat, the raw question of experimental science is exclusively, "Is such and such a relationship between experienced data invariant or not?"; not, "Does a 'thing' have such and such properties?" or "Is such and such a relation a law of the external world?"

However, these raw questions of fact are not all there is to science, unless, indeed, we consider a purely descriptive account of factual relations science. Science *per se* attempts more than to describe, and though we may allow purely descriptive material, from which nothing is generalized or concluded, a tentative place in an incompletely developed science, a science really becomes scientific when its facts are so related that you can pass from one to the other by a determined route. It must be such that the connection of one fact with another is itself an integral part of that science. That is to say, a body of fact to be scientific must form a system, *i.e.*, an aggregate of fact, the specification of the relationship between which is a part of the specification of the aggregate.

But this is not all. Not only must we in science fix the connections between facts, but, if we are to pass from one body of facts to another by some process of proof or explanation which is sufficient to completely prove or explain the remaining facts, we must admit that science forms a system of the particular kind recently called logical,[1] it being the property of such systems that among the entities of which they are composed (in this case the propositions which con-

[1] This JOURNAL, Vol. XVI, p. 518 (1919).

stitute the science) there are certain ones (the more general laws or postulates) which, once they are given, determine completely some if not all of the remainder (the "proven" or "explained" less general theorems). Thus when once the general laws of science are given it is impossible that the theorems be otherwise. If this were not so and each fact were independent of the other, or if its relations to other facts were not of such a nature, rigorous proof would be impossible, and one law could not be said to be the consequence of another. Thus if we are to have science at all, we must admit some sort of necessity connecting one body of fact unambiguously with another. From the postulates of Euclid it must follow that the sum of the squares on the sides of a right-angled triangle must be equal to the square on the hypotenuse and not equal to some different quantity, for, to put it most briefly, the very essence of science is that of a logical system.

But though this must be admitted, I think, for science in general, and though it forms apparently the basic assumption on which science in general is built, for experimental sciences this assumption takes a particular form which has important consequences.

In the pure non-experimental sciences, if any there be, say in such a science as non-Euclidean geometry where no one would think of appealing to experiment to see if the sum of the angles of a triangle are greater or less than two right angles, and in which no test for truth value is pertinent save the mere fact that the propositions of the science form a logical system, *i.e.*, that theorems can be proven once postulates are given, sciences in which the question of the truth of the postulates themselves is quite outside the scope of the science, it is quite conceivable that this requirement that theorems be proven may be merely a physiological condition the brain structure imposes on thinking, or perhaps merely a convention of the scientist, a rule he has arbitrarily laid down to govern the game of science-making, and that the data of science itself, be they outside real triangles or percept-nexus triangles, are in fact entirely independent entities which really stand in no such determinate relationship as that supposed by the scientist when he proves one from the other. Perhaps it may be supposed the real data of science just are, and that that is all there is to it, and that any dependence of one on the other is a fiction imposed upon them for the convenience or perhaps even by the necessity of the human understanding.

But though such an assumption of the absolute independence of the basic data can, as has been said, be made for non-experimental sciences, that is, for sciences which depend only on self-consistency or other logical tests for their truth value, such an assumption can not be made for the experimental sciences. Here it must be assumed

that the data of science, quite independent of any conscious process of proof, are in themselves related in the way that is assumed in the deduction of one set of laws from another. Here it must be assumed, if experiment is to be used to prove or disprove theory, that in the outer world, or better in the percept-nexus which we are engaged in studying, there actually does exist a set of invariable relationships between facts, so that one fact and not some contrary fact does in reality follow from a given set of general laws, thus quite regardless of convention or any conscious process on our part. For it is to be noted that while in the purely non-experimental sciences, we have, or should have, confidence in our theorems only in so far as we are conscious that the mental or mechanical processes by which we passed from postulate to theorem were correctly carried out, in the experimental sciences, though we may think our reasoning in passing from one set of laws to another was quite correct, we almost always appeal where possible to an experimental verification of our reasoning; for we assume, and this is the basic assumption of experimental science, that, in reality and quite independent of any mistakes we may make in reasoning, the data of science, whatever they are, are in fact so organized that the very existence of one set of laws is inexorably connected with the existence of just those other laws which, in a properly formulated science, can be proven once the first set is given.

It is just this assumption which allows us to use the results of experiment as a check either of our reasoning in passing from one supposed law to another, or, if we have no reason to doubt our reasoning, as a check as to the possible truth of the supposed law we started from. Thus, suppose we had confidence in the first and second laws of thermodynamics, and derived from them by what we supposed to be rigorous processes of proof the law that for dilute solutions of non-dissociated substances the change of the freezing point with the concentration is equal to 1.99 times the square of the absolute temperature divided by the heat of fusion of the solvent. Suppose we try the experiment and find this is not so. There are then several things which may be wrong. (1) Our experimental conditions may not have been as we thought they were, our thermometer may be inaccurate, equilibrium may not have been established, *etc., etc.*, but all these can easily be checked by processes involving no dubious assumptions. (2) Our assumption that our solution is dilute and non-dissociated may be wrong. If it were, certain consequences would follow and these in turn may be checked up by the same sort of processes we are describing. (3) Our proof may be incorrect. (4) Our assumption of the so-called laws of thermodynamics may be wrong. And (5) it may be that all these processes and as-

sumptions are correct, but that we are not justified, just because by a purely mental or at least human process we derived this law from other laws which are so, in fact, in assuming that we have any right to expect the theorem "proven" to be experimentally verified. Now the point to be noticed is that though we may doubt any or all of the first four of these assumptions we never doubt for a moment the fifth; and we would be willing to give up instantly even the laws of thermodynamics themselves, together with all of the consequences which follow from them, once we had convinced ourselves, perhaps even on the basis of a single very accurate measurement and single careful calibration of conditions and instruments, that experiment did not jibe with expectation, this even though the consequence which was tested was many times further remote from the postulates than the one we have just chosen. Never once would we give up the assumption that the data themselves were necessarily interconnected into a logical system, for to do this would be to give up the very possibility of an experimental test of assumptions and reasoning.

This must be noted as perhaps the most important point of this whole discussion for metaphysics, regardless of whether we regard the data of science as things outside, or as percepts, or even concepts. The mere fact of experimental science requires the outer world, if such a thing is to be assumed, to be a logical system in the exact sense stated, or, if we do not assume an outer world, it requires that the raw data of science, be they percepts, pure properties, partial realities, spirit, or what not, be likewise organized into a logical system, the laws of which can be tested by experiment. If the raw data of science are so organized, it apparently is of little effect on the methods and possibility of science whether you assume them composed of spirit, matter, force or what not, or indeed whether you assume that they dwell in an external world, in your mind, in some "Absolute," or nowhere at all.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Psychology of Functional Neuroses. H. L. Hollingworth. New York: D. Appleton & Company. 1920. Pp. 259.

Professor Hollingworth in his book applies himself to two main projects. The first is represented by an attempt to give in psychological terms the type of reaction presented in psychoneurotic conditions. To do this he reverts to the conception of redintegration which Hamilton first used to indicate the tendency of a complex idea

to be reinstated upon the occurrence of one of its constituent parts. We need only to grant that a part of a stimulus may provoke a reaction similar to the reaction provoked by the complete stimulus to see the application of this conception to the psychoneurosis. Its relation is especially traceable in the war psychoneurosis cases. In the individual, whatever the initial psychoneurotic symptom, it arose as a reaction to a very complex situation involving such varied details as weapons, ghastly sights and noises, physical violence, *etc.* The individual commonly recovers from the acute symptoms when removed from the stimulating environment. During some time afterward the occurrence of a single detail of the original complex experience is sufficient to induce the complete symptom reaction again. That this conception is presented with breadth of consideration is well indicated by such comments as these:

> "Untutored [savage] minds are especially likely to display the redintegrative type of thinking. . . . The footprint of the enemy, the sight of his weapon, the sound of his voice are feared in much the same degree as is his actual attack. A very great part of the reactions and beliefs of primitive men is made up of just such conduct—acts which, if they would be exhibited by a man in modern life, would be considered psychoneurotic."

It is properly enough explained that redintegrative reactions have a rôle in such normal processes as learning; also that wherever redintegrative reactions occur they are variously encountered both in normal and abnormal, faulty, incomplete, and otherwise inadequate forms. This leads to the statement,

> "Sagacity is, then, the ability to comprehend properly the part in its relation to the whole and to discriminate out of a whole the appropriate relevant or significant detail. Failure in sagacity will thus imply a disposition to react to a present total situation by singling out some detail of it and reacting to this detail by some total reaction previously associated with a whole in which the detail figured as an item. This is the mechanism of the psychoneuroses."

One's opinion of this *entirely* hinges on one's opinion of the *sagacity* element. We can accept the well presented account of the redintegrative reaction, *per se*, and admit that there is this psychological process in the psychoneurosis sequence. We hesitate, however, to accept the other implication—that inherent *sagacity* plays such a determining rôle.

The second main project of the book serves to furnish Professor Hollingworth with his reasons for his emphasis on this factor. It concerns intelligence ratings of nearly 1200 psychoneurotic individuals—soldiers under treatment during and at the close of the late war in the Plattsburg army hospital. From these examinations it was found that the soldiers with chronic or extended functional nervous conditions were in the main either decidedly inferior to the

average soldier in intelligence, or else considerably superior to him. The opinion is expressed that most of the average intelligence men who had psychoneurotic symptoms made a rapid recovery and did not reach a hospital for extended cases. Regarding the other grades of intelligence, it is suggested that the high grade cases failed to make prompt recovery because of a high strung sensitiveness to the effects, and the low grade because of inadequate motivation and insight.

It is now possible to explain why we are skeptical of the value of Professor Hollingworth's interpretation. He frankly stresses *sagacity*. His explanation remains good as long as his words relate to the psychoneurotic group of inferior mental capacity. When he encounters the other psychoneurotic group, that which is considerably superior to the average, in intelligence, he explains their failure to make prompt recovery by attributing to them "a high strung sensitiveness to the effects." High strung sensitiveness has no obvious identity with lack of sagacity. When it is needed to explain one large undisputed group, it strongly tends to weaken a theory, put forth as general in application, whose corner stone is something quite dissimilar.

One interesting observation in the book was gained by correlating the intelligence ratings with specific symptoms, with the latter divided into three large groups, objective or physical, subjective or mental, doubtful or transitional. The individuals with overt, objective somatic and postural symptoms were four years inferior in intelligence rating to those individuals whose symptoms were psychic, subjective and automatic. Those individuals manifesting a combination of both types of symptoms constituted mentally also an intermediate group. This particular finding accords with the observations of most writers, but it is of great interest to have it receive scientific confirmation.

Later chapters of the book deal with the "scattering" found in psychoneurotic cases, with the purely statistical aspects of the investigation, with a discussion of the reliability of group survey in the determination of mental age as compared with individual rating and with methods and standards of mental measurement.

The lucidness of the writing and clear cut formulation of thought need mere mentioning to emphasize the agreeable scientific spirit of the book. With a very few exceptions, there is sufficient skill in the use and understanding of medical diagnostic terms. Possibly an over-assuredness in the conclusions throughout is a defect. When the task is told in terms of approximate mathematical valence the exactness of the answer can perhaps be over-rated.

Chiefly for its method, but also for its conclusions which are stimulating, the book very much deserves study.

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An Introduction to Social Ethics: The Social Conscience in a Democracy. JOHN M. MECKLIN. New York: Harcourt, Brace and Howe. 1920. Pp. ix + 446.

The close connection between scientific ethics and sociology is coming gradually to be recognized. This book is a most happy combination of the two subjects. It frankly bases ethical values upon the study of the social process. It therefore discards most of the paraphernalia of traditional ethics. There is no formal discussion of free will, of the nature of moral obligation, of the nature of good and evil, or of the *summum bonum*. Rather, after an introductory section of one hundred pages largely devoted to giving the historical setting of moral problems from Puritan times to the present, and after another section of about the same length devoted to a socio-psychological analysis of the moral sentiments, the author takes up the practical problems of an harmonious social order under present conditions, considering successively the moral problems involved in the relations of the individual to institutions in general, to the family, to the church, to the school, to private property, to machine industry, to business enterprise, to city life, and to the state.

To some Professor Mecklin's sociological approach to moral problems will seem not sufficiently profound and critical; but to many others it will give value to the book. Whatever special criticisms may be offered, the general value of such an approach can no longer be doubted. The author is fully aware of the limitations of present social science as a basis for ethics, but it may be fairly claimed that he has made the best use of his available material. He rightly sees in social psychology the chief hope of making the study of society scientific and hence the best basis for a scientific social ethics, although he draws more or less upon all of the social sciences. Moreover, he shows wide acquaintance with the best economic, political, and sociological writers, and usually uses their results critically, though not always.

The author has thus produced one of the most stimulating concrete ethical discussions of the problems of present democracy. The general title of the book is, perhaps, too broad; but its sub-title, "The Social Conscience in a Democracy," very nearly describes the contents of the book. As an attempt at the fusion of ethics and modern

social science for the solution of present social problems it deserves the careful consideration of all students of those problems.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. September–October, 1920. *Le mécanisme de la pensée, les schèmes mentaux* (pp. 161–202): DR. REVAULT D'ALLONNES.–"Modifying the statement of Aristotle, we assert that *it is not possible to think without schematizing.*" Sensation, perception, apperception, are distinguished on this basis, and judgment and thought studied as modes of employing schema. *Contribution à l'étude des "regréssions psychiques"* (pp. 203–272): ALBERT LECLÈRE. – This study is devoted to the examination of the sexual aspect of the problem of psychic regressions. *L'hérédité des caractères acquis dans ses rapports avec le problème du progrès,* (pp. 273–294): DR. S. JANKELEVITCH. – "Man will become refractory to evil, not in virtue of a modification of his nature, but uniquely under the influence of an environment which will render immorality useless." *Analyses et Comptes rendus.* J. Hoffmans, *La Philosophie et les philosophes, Ouvrages généraux:* P. MASSON-OURSEL. C. A. Richardson, *Spiritual Pluralism and Recent Philosophy:* G. MARCEL. L. L. Penido, *La Méthode intuitive de M. Bergson:* R. GUÉNON. P. G. Franceschini, *Manuale di Patrologia:* P. MASSON-OURSEL. J. Roger Charbonnel, *La pensée italienne au XVI^e siècle et le courant libertin:* P. MASSON-OURSEL. Tomaso Campanella, *Città del Sole:* P. M.-O. H. L. A. Visser, *Collectief Psychologische Omtrekken:* A. VAN GENNEP. Giuseppe de Castellotti, *Elementi di Etica:* J. PÉRÈS. *Revue des Périodiques.*

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grays and whites form two qualitative series placed end to end. This affords a clarification of the color theory. *The spatial condition of the fusion of warmth and cold in heat* (pp. 303–312): J. HENRY ALSTON. – Heat is a physiological fusion of the excitations normal to warmth and cold. *Book Review. The Social Evolution of Religion,* George Willis Cooke: PHYLLIS BLANCHARD. *Book Notes. The Mental Hygiene of Childhood,* William A. White. *Graphology and the Psychology of Handwriting,* June E. Downey. *Psychoanalysis; Its History Theory and Practice,* André Tridon. *Introductory Psychology for Teachers,* E. K. Strong, Jr. *Personal Beauty and Racial Betterment,* Knight Dunlap. *Imagination and its Place in Education,* Edwin A. Kirkpatrick. *Modern Spiritism,* A. T. Schofield. *Sex Attraction,* Victor C. Vaughan. *Women's Wild Oats,* C. Gasquoine Hartley. *The Hysteria of Lady Macbeth,* Isador H. Coriat. *An Introduction to Social Ethics,* John M. Mecklin. *An Introduction to Philosophy,* Holly Estil Cunningham. *The North Riding of Yorkshire,* W. J. Weston. *Native Villages and Village Sites East of the Mississippi,* David I. Bushnell, Jr. *Thirty-Second Annual Report of the Bureau of American Ethnology,* 1910–1911. *Thirty-Third Annual Report of the Bureau of American Ethnology,* 1911–12. *Third Annual Report of the Massachusetts Commission on Mental Diseases* (1918).

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NOTES AND NEWS

The Carus Lectureship and the Joint Meeting of the Eastern and Western Divisions of the American Philosophical Association

In confirmation of a proposal made orally to Professor H. B. Alexander and by him reported to the Western Philosophical Association (now the Western Division of the American Philosophical Association) at its spring meeting in 1920, Mrs. Mary Hegeler Carus, widow of the late Dr. Paul Carus, has written the following leter:

"25 March, 1921

"Professor James H. Tufts,

"*Dear Sir:* The Edward C. Hegeler Foundation and the Open Court Publishing Company, as a tribute to the memory of Dr. Paul Carus, for so many years a devoted student of philosophy and kindred subjects, offer to provide for a series of lectures to be delivered under the auspices of the American Philosophical Association or the divisions of the American Philosophical Association, acting jointly.

"The terms and conditions of the offer are as follows:

"I. The lectures shall be known as the Paul Carus Lectures.

"II. The lectures shall be given as the Committee choosing the lecturer may determine during the year 1921 or 1922 and at the meeting of the American Philosophical Association or the divisions of the American Philosophical Association, acting jointly. If there should be any reason for modifying this condition, the donor will be very glad to consider any requests for such modifications.

"III. The lecturer shall be chosen and the invitation extended by a committee consisting of not more than nine representatives of the American Philosophical Association (these representatives to be appointed by the Executive Committee of the American Philosophical Association, or by the Executive Committees of the several divisions of the American Philosophical Association, according to the rules and practice which govern such appointments) together with not more than three representatives of the Open Court Publishing Company.

"IV. The lecturer shall receive an honorarium of one thousand dollars, to be paid by the Trustees of the Edward C. Hegeler Trust Fund.

"V. Within a reasonable period after the delivery of the lectures, the manuscript of the lectures shall be delivered to the Open Court Publishing Company for publication in book form. This

provision shall be optional for the first series of lectures. It is understood that the honorarium shall not be regarded as a purchase of or royalty upon the published book, but that the author shall receive the usual royalty accruing from the sales of his book by the Open Court Publishing Company.

"Trusting that this offer may appeal to the members of the American Philosophical Association and make possible some real contribution to the field of philosophy and that the lectures, if given and published, may serve to stimulate and deepen the interest in philosophical studies, I remain

"Faithfully yours,

"MARY HEGELER CARUS,

"Trustee of the Edward C. Hegeler Trust Fund and President of the Open Court Publishing Company."

In accordance with the terms of this letter and the instructions of the Eastern and Western Divisions the representatives of these two Divisions, in conference with Mrs. Carus representing the Open Court Publishing Company, chose Professor John Dewey to deliver the lectures at a joint meeting to be held in September, 1921, if possible. A letter and cable were sent to Professor Dewey, but no reply has been received. In view of the consequent inability of the Committees to make any definite arrangements, and of the desirability of having a well-attended meeting for these lectures the Committees have reluctantly decided to postpone until a later date the joint meeting, due notice of which will be given.

In making public this letter and announcement the officers of both the Eastern and the Western Divisions of the American Philosophical Association desire to express their appreciation of the generous interest in philosophical study and publication which prompted the liberal offer of Mrs. Carus on behalf of the Edward C. Hegeler Foundation and the Open Court Publishing Co. They desire to express also the hope that these lectures may encourage and strengthen the cause of philosophical study which Dr. Carus had so warmly at heart, and to which he devoted a life-time of service as editor and author.

A. H. JONES,
Secretary Eastern Division,
G. A. TAWNEY,
Secretary Western Division